

# Martindale

## MAX RESPIRATORY HELMETS

### ***Martindale***

*Centurion Safety Products Ltd*

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### **USER INFORMATION AND INSTRUCTIONS FOR USE & MAINTENANCE**

We have made every effort to ensure that the information given in this catalogue is accurate, but our policy of continuous product development means specifications are likely to change and such information is for guidance only. Martindale will not accept liability for any loss, damage or consequential loss arising from information contained herein. Your statutory rights will not be affected.

Before using your Max helmet it is essential that you study the following instructions. Special attention must always be given to the warnings, capabilities and maintenance requirements stated herein, and to any labelling specific to your model.

Martindale will accept no liability for damage occurring:

- in connection with unprofessional use and/or maintenance of the product, including use for the purposes other than those for which it is intended
- due to failure to observe the instructions given in this manual
- in connection with repairs to the safety product that were not carried out by or on behalf of our company

EC type examination by:

BSI Product Services, Maylands Avenue, Hemel Hempstead, Herts. HP2 4SQ, UK.

(Notified body No. 0086) All Centurion products are CE approved. CE 0086

002-001-111 (01/07)

## Technical Specification

Products fitted with grey strongrings are Intrinsically safe (please see instructions specific to hazardous installations). Products fitted with black strongrings are only intended for use in working areas where there is no possibility of explosive concentration of gasses or vapours building up.

	<b>Miner P1</b>	<b>Integra P2</b>	<b>Integra Intrinsically Safe P2</b>
<b>Helmet weight (approximate)</b>	1100g	1250g	1400g
<b>Battery Mounting</b>	external waist mounted	within helmet	within helmet
<b>Battery Type</b>	Lead acid Certified to: EN50033	NiMH	NiMH
<b>Battery Duration (hours)</b>	12	10	8
<b>Intrinsically Safe</b>	Yes ATEX Certified to: EN50033 EN50014 EN50303 EN50020 EEx ia I M1	No	Yes ATEX Certified to: EN50014 EN50284 EN50020 EEx ia IIBT3 1G Non-Mining EEx ia I M1 Mining
<b>Usage areas</b>	Mining Environments	Dust Environments requiring an integrated unit	Dust Environments requiring an integrated unit + for use in potentially explosive atmospheres
<b>Size</b>	All helmets fit head sizes from 51 - 62 cm		
<b>Respiratory Protection (EN146)</b>	THP1	THP2	THP2
<b>Nominal Protection Factor</b>	10	20	20
<b>Part No's</b>	E100	E145	E140IS
<b>Product Options</b>	Variations of the basic model are also available. Helmets are available with ear defenders but also with ear defenders and Centurion Connect Clips fitted to the side of the shell to enable the user to fit Centurion carriers, face screens and welding shields for various applications.		
	With Ear Defenders	With Ear Defenders and Connect Clips	
<b>Integra P2</b>	E140	E140C	
<b>P2 Intrinsically Safe</b>	E140ISE	E140ISEC	
<b>Face Protection</b>	Withstand impact - Class B EN166 Polycarbonate screens will withstand temperatures of up to +190°C		
<b>Head Protection</b>	EN397		

## Flow rate testing of your Max helmet

Prior to each use of your helmet, please check the manufacturers minimum design flow rate using the Max test flow indicator which is provided with your Max helmet. The indicator can also be purchased separately (part number E305). Full instructions are provided within the test device package.

If the flow rate is not sufficient ensure that you:

- Check the filter by replacing it with a fresh one
- Check the battery is fully charged
- If the flow rate is still insufficient, return your helmet to your nearest agent or to the manufacturer

It is important that the correct flow rate is achieved when using your Max respiratory unit.

Note: Ensure the helmet is free from visible damage e.g. holes and cracks, etc.  
Use only Martindale replacement parts.

### Martindale Certified Accessories and Replacement Parts List

<u>Part No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Description</u>
E200	Filter standard	P2 particulate	(Suitable for Miner P1, Integra P2 & Integra IS P2)
E201	Filter odour	P2 particulate and nuisance odours	(Suitability as per E200)
E210	P1 Visor anti-scratch	E225	Headband cradle & pad kit
E210L	P1 Long Visor anti-scratch	E230	Hygiene kit for Ear Defenders
E211	P1 Visor anti-mist	E235	Pair of Ear Defenders
E211L	P1 Long Visor anti-mist	E240	Chinstrap - nylon
E212	P2 Visor anti-scratch	E241	Chinstrap - leather
E213	P2 Visor anti-mist	E245	Plug cover
E220	P1 Head Seal Kit	E246	Reflective kit
E221	P2 Head and Face Seal Kit		
E300	Miner Helmet Airflow Test Kit		
E305	Integra Helmet Airflow Indicator		
E310	Oldham cap lamp & battery (certified to EN50033) - UK Mining only		
E345	Charger for all Integra models (10 hour Battery)		
E350	Oldham charger		
E360	Fuse pack (10 of)		
E370	Fuse resistor link for cap lamp used on Miner helmet		

## Face Seal

If the visor face seal becomes torn or damaged in any way you must immediately replace the face seal assembly. To fit, follow the instructions given for the P1 visor. For P2 face seal replacement, remove the black stud on either side by gripping the face seal behind the stud and pulling away to de-snap. Carefully peel away the face seal from the visor to detach Velcro. Fit your new face seal by placing evenly onto visor Velcro and pressing down to ensure a seal is obtained on the visor. Attach each side of the face seal to the ear defender surround by inserting the black stud through the face seal hole and snapping the stud into the hole provided (either side) below the top white stud.

## Sweatband

### To remove

Lift the sweatband off the retaining pips by stretching until it becomes free.

### To replace

Gently stretch the sweatband over the retaining pips, locating the pips through holes in the sweatband and taking care not to damage the material. Ensure that the new sweatband is securely in place.

## Chinstrap

### To remove

With the ear defenders retracted gently pull one end of the chinstrap until it becomes free. Repeat for the other end.

### To replace

With the ear defenders retracted, holding bracket on end of chinstrap push retainer pip through hole underneath face seal on strongring, snap into place. Repeat for the other end.

## Cleaning

The helmet and all its parts should only be cleaned with warm water and a soft cloth.

Do not use organic solvents.

Do not attempt to clean the filter, replace on a weekly basis.

Do not immerse in water.

Do not apply paints, solvents, adhesives or self adhesive labels to the helmet except those approved by the manufacturer.

Only clean the product in safe areas.

## Storage

Store in a clean dry place at an ambient temperature.

Maximum limits of storage (including filters)  $-5^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ . Relative humidity <90%.

## Fault Location

In the event of a reduction of airflow, leave the polluted environment immediately and carry out the following checks:

- The filter is clean, undamaged and fitted correctly
- The face seals are undamaged, fitted and are sealing correctly
- The battery is connected and is fully charged (substitution with a new battery may be necessary)
- Any helmet which exhibits visible damage should be replaced
- If the motors are not running send helmet back to your nearest agent or to the manufacturer

## Ear Protection

Meets acoustic performance of EN352-3

### Attenuation data

Mean attenuation and standard deviation as measured in BS EN 24869-1:

FREQUENCY	63	125	250	500	1K	2K	4K	8K
MEAN ATTENUATION	9.9	9.9	13.9	18.1	24.0	25.2	39.7	27.4
STANDARD DEVIATION	3.6	3.7	2.9	4.8	2.8	3.7	3.6	6.9
ASSUMED PROTECTION	6.4	6.2	11.1	13.3	21.2	21.4	36.1	20.5

H = 26dB M = 19dB L = 14dB SNR = 22dB

### Complete Unit

 Conforms to PAS 016

Flow rates of 160-180 litres a minute (depends on battery and filter status) minimum designed flow rate of 130l/min.

Motors are extremely quiet - generating a maximum of 65dB. Guaranteed for two years.

## Warning/Attention

Examination and function test of the helmet should be made weekly.

A thorough visual examination of all parts of the helmet should be made. Any defects should be remedied before further use.

Any helmet with visible damage e.g. a cracked or pierced shell should be replaced.

This helmet is made to absorb the energy of a blow by partial destruction or damage to the shell and the harness or protective padding, and even though such damage may not be readily apparent, any helmet subjected to severe impact should be replaced.

Any helmet which is two years beyond its manufacturing date should be replaced.

This helmet should not be modified in any way.

In the power off state this helmet will offer no respiratory protection and there may be an immediate build up of carbon dioxide - this is to be considered an abnormal situation.

At very high work rates the pressure in the device may become negative at peak inhalation flow.

At very high wind velocities it is possible that the respiratory protection may not be at its optimum potential.

This device is only to be used in atmospheres with normal oxygen content.

Only use intrinsically safe products in explosive atmospheres.

The Max helmets must not be used in areas with concentrations of gases and vapours above the OEL (Occupational Exposure Limit) as defined in National Standards or areas with dust concentrations requiring a protection factor of more than that detailed on page 1.

Manufacturer's minimum design duration is 8 hours. Typical battery duration exceeds this and depends on model used. See technical specification on pages 2-3.

It is possible that visors may transmit impacts to eye-wear enclosed by the visor.

## STRONGRING MARKINGS (Intrinsically Safe)

**Instructions specific to hazardous area installations (reference European ATEX Directive 94/9/EC Annex II 1.0.6).** The following instructions apply to equipment covered by certificate numbers SIRA 02ATEX2019X (INTEGRA) and SIRA 02ATEX2020X (EH1). These instructions relate to compliance with the above Directive only.

1. The certification marking is as follows

### MINER



CENTURION SAFETY PRODUCTS LTD  
21 HOWLETT WAY  
THETFORD, NORFOLK, IP24 1HZ, U.K.

### Helmet Label



### Explanation of Markings



Explosion protection

EEx Symbol to indicate that the product is in compliance with one or more standards in this series

Ia For intrinsic safety according to EN 50020

I Explosion group

0518 SIRA Notified Body Number

### INTEGRA

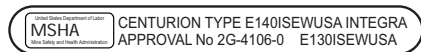


CENTURION SAFETY PRODUCTS LTD  
21 HOWLETT WAY  
THETFORD, NORFOLK, IP24 1HZ, U.K.

### Helmet Label



### INTEGRA (MSHA)



### Explanation of Markings

As above plus:

IIB Explosion group

2G-4106-0 Approved Certificate Number

MSHA Approval & Certification Center  
Mine Safety and Health Administration

### To replace

Reposition two cradle brackets through the two slots within the forehead section of the face seal. Replace the two cradle brackets into the strongring slots at the front of the shell. Relocate both sides of the face seal onto the ear defender surrounding with the white studs. Locate the front of the headband onto the cradle brackets. Make sure that an efficient seal is formed with both visor and ring.

Note: The face seals on the P1 visor are not replaceable.  
The face seals on the P2 visor are replaceable.

### Ear Defender Cup and Ring

#### To remove

Free the wires from their location on the body of your safety helmet, taking care to remove the front wires last.

#### To replace

Locate the wires in the appropriate holes on the body of your safety helmet, taking care to fit the front wires first.

### Ear Defender Cushion

Hearing protector cushions may deteriorate with use and will then need replacement.

#### To remove

Peel the old cushion away from the cup of the ear defender and discard.

#### To replace

Remove the protective backing paper from the replacement cushion and carefully locate onto the ear defender cup, making sure that the thickest corner of the cushion will sit behind your ear lobe when in use, then press firmly into place.

### Maintenance/Serviceing

Only purchase/use Centurion Martindale Protection certified replacement parts - see replacement parts list at back of manual. It is likely that certain items may deteriorate in use and may need replacement in the course of a twelve month period (or except where stated). The helmet has been designed so that tools are not necessary to replace parts. Do not use sharp tools to remove any parts of the helmet.

### Filter

The filter is disposable, and should be changed on a **weekly** basis (after approximately fifty hours of constant use). The filter is intended for use in environments containing nuisance or respirable dust hazards only and is limited to solid aerosols or water based aerosols only. (Water based aerosols are those produced from solutions and/or suspicious particulate materials in water such that the only workplace contaminant is attributed to this solid material).

### Headband/Cradle

The headband and cradle should be removed and replaced in its entirety when replacement is necessary.

#### To remove

With the ear defender assembly retracted, carefully slide the six white plastic retainers from their slots in the body of the helmet (see drawing on page 6). The two front retainers need to be separated from the headband and then released from the front of the face seal.

#### To replace

Take the replacement assembly, ensuring that the 'open' side of the headband is towards the rear of the helmet, and push the white plastic retainers (marked R1, R2) firmly into the empty slots. The back of the two front retainers (marked F1, F2) need to be first inserted through the two holes in the front of the face seal, then attached to the slots on the headband.

be cut/modified to accommodate the spectacle arms. This can best be accomplished by cutting the face seal at the required level with a pair of scissors (see below).

**To fit**

Cut away the surplus material until a suitable fit is achieved with scissors. Carefully remove only a little at a time, as a gap of more than 2mm will seriously reduce the respiratory protection offered by the helmet.

**P2 Integra System**

P2 Systems are fitted with an elasticated fabric face seal. No adjustment of this face seal is necessary or desirable.

**Visor/Respiratory System - operating method**

**Integra**

To operate the respiratory system, grip the tag at the bottom of the face seal and pull down in a one-handed operation. The visor in the down position will then trigger the motor and start the air flowing through the helmet. The airflow will automatically cease if the visor is not secured in the down position.

**Miner**

To operate the respiratory system, attach the Oldhams cap lamp and battery to the helmet. The cap lamp should be fitted to the helmet in the same way as the cap lamp is positioned on the charging rack, i.e. a push twist and turn motion. The air flow will commence as soon as the lamp is attached to the helmet. To lower the visor, simply grip the visor in the centre and pull down in a one handed operation.

**Method of charging battery**

**Integra**

Locate charger plug into battery socket at rear of helmet and charge for a minimum of 12 hours and a maximum of 16 hours - do not overcharge. Use E345 charger for Integra battery.

**Intrinsically Safe Integra**

As per Integra, use E345 charger. Do not charge in an explosive atmosphere.

**Miner**

Locate cap lamp in battery charging rack and charge for required length of time.

**Visor**

**To remove**

For the P1 Visor adjust the visor until mid-way between the open and closed position. Pull the visor off each orange pin located underneath the ear defenders, away from the pivot arm (de-snap) and carefully remove the visor from the shell of the helmet. For the P2 Visor remove the visor in the same way but firstly remove the black stud from each side of the ear defender surround to release the face seal.

**To replace**

For the P1 Visor snap the visor onto the pivot arms by pushing it over the orange pins when at the mid-way position. Check to ensure that the new visor moves freely. If not, repeat the steps described above. For the P2 visor replace the visor in the same way but then secure the material of the face seal to the side face seal flaps found on the side of the ear defender surround using the black studs.

**Foam face seals**

**To remove**

Pull out white studs located on the ear defender surrounding. Remove cradle bracket from strongring and remove complete face seal from cradle and disregard.

1. The EH1 is for mining applications only and is Category M1 equipment, i.e. may be used irrespective of the presence of explosible concentrations of firedamp.
2. The integra is for mining applications and is category M1 equipment, i.e. may be used irrespective of the presence of explosive concentrations of firedamp. It is also for non-mining applications and is category 1G equipment, i.e. may be used in zones 0, 1 and 2 with flammable gases and vapours assigned to apparatus groups IIA & IIB and with temperature classes T1, T2 & T3.
3. The electrical circuits of the EH1 and Integra are only certified for use in ambient temperatures in the range -20°C to +40°C and should not be used outside this range.
4. Only the battery charger recommended by the manufacturer shall be used.
5. The equipment has not been assessed as a safety-related device (as defined by Directive 94/9/EC Article 1.2 and referred to in Annex II , clause 1.5).
6. Maintenance shall only be carried out by suitably-qualified personnel and, where applicable to due electrical aspects of the helmet, only replacement parts supplied by the manufacturer shall be used.
7. Repair of this equipment shall be carried out by the manufacturer or in accordance with the applicable code of practice.
8. The battery pack charger must not be supplied (under normal or abnormal conditions), from a source of potential, with respect to earth, in excess of 250Vrms or 250Vdc.

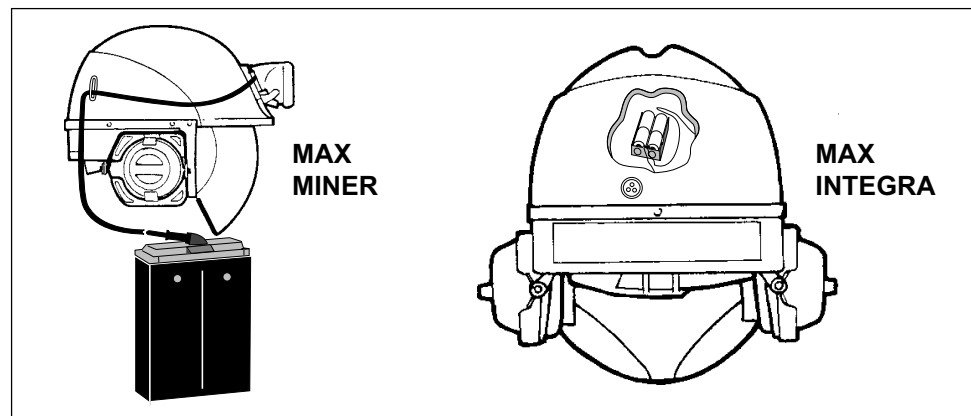
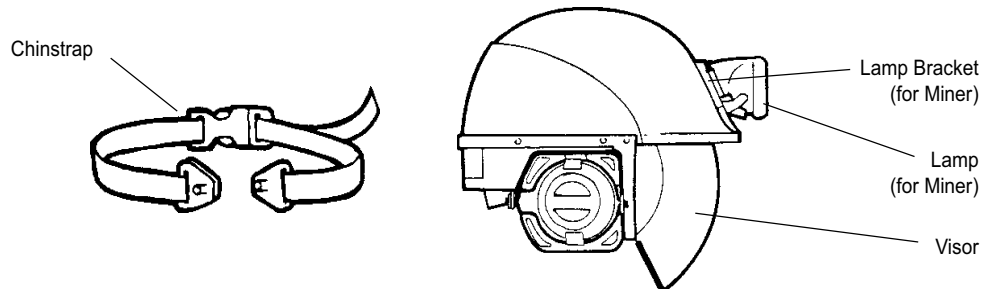
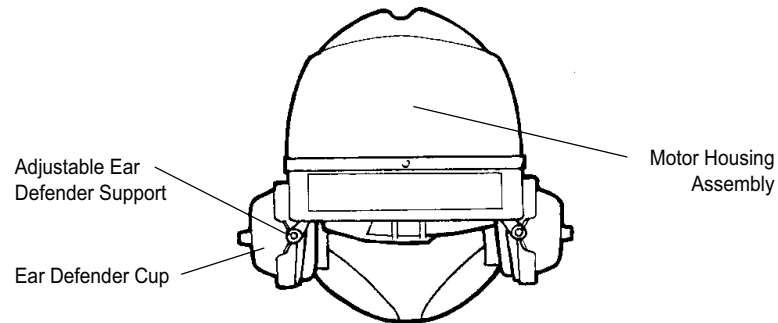
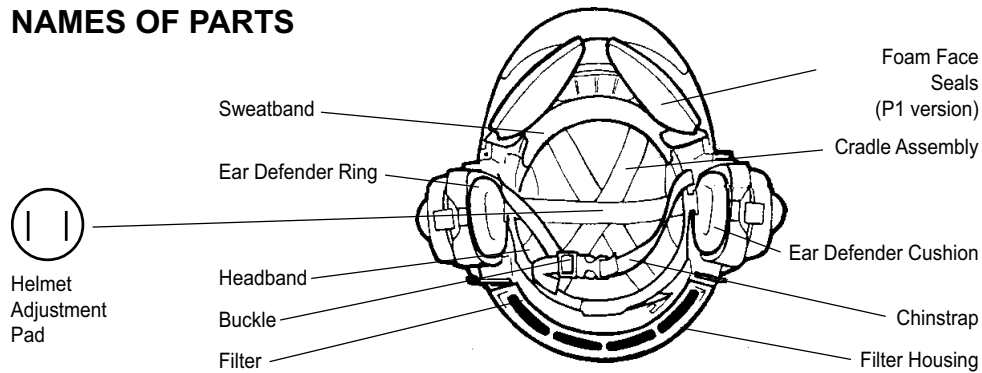
**OTHER MARKING**

PAS016:1995	Product Approval Specification
CE	CE Approval
0086	BSI Notified Body Number
yy	Date of Manufacture
-20/+50 deg.C	Claimed performance option
RL	Lateral rigidity

**STRONGRING MARKINGS  
(Non Intrinsically Safe)**



## NAMES OF PARTS



## Fitting Instructions

### Headband

#### To adjust

Adjust the headband by pressing the edge of the headband buckle and opening the headband to its fullest position. Then slightly pull the strap through the buckle and place the helmet on your head to test the fit. Continue with this by pulling the strap through the buckle further each time until the helmet fits firmly on your head. To achieve adequate protection this helmet must fit or be adjusted to the size of the individual wearers head.

### Chinstrap

#### To fit

With the ear defenders retracted, holding the bracket on end of chinstrap push retainer pip through hole underneath face seal on strongring, snap into place. Repeat for the other end.

#### To adjust

Place the helmet on your head and connect the male and female connectors under your chin. Pull the loose end of the strap through the fastener until a firm, comfortable fit has been achieved.

### Ear Defenders

#### To adjust

1. The ear defenders have been supplied in the inward position, push out to the external position. Fit the helmet on your head and push the ear defenders inward to cover your ears.
2. The ear defender has three width adjustment positions - provided by the ear defender support at the back of the helmet - the position on receipt will be the outside slot. If the ear defenders are too loose, simply adjust the ear defender supports to the middle or inside position, whichever gives you the best fit. To achieve adequate protection this helmet must have the hearing defender adjusted to achieve the same spacing all around between the ear and the seal.

Should further adjustment be required, the ear defender cushion can be re-positioned on the ear defender ring in any direction (see below).

If you find that the ear defender is too low on your ear, raise the level by fitting the helmet adjustment pad to the cradle (see main drawing).

When correctly adjusted, the ear defenders will fit small/medium/large size range as defined in EN352-3.

#### To seal

It is important in order to achieve proper ear defender protection that the ear defender cushion sits securely around your ears. When you receive your helmet, the cushion will be located centrally around the hollow in the ear defender. You may need to move the cushion around the cup to affect the best seal around your ear. If so, peel off and reposition until a comfortable and effective seal is made.

Ear defenders are supplied in pairs; each cushion is designed specifically for the left or right ear lobe - ensure the correct cushion is used on each side.

### Face seals

#### P1 Miner System

To ensure respiratory effectiveness it is important to form a seal between the visor and your face with the face and visor seals. The seal has been manufactured to accommodate the dimensions of an average face. It is important that the seal fits as closely as possible to your face. Ideally it should be just touching the skin and should be checked prior to each use.

This device has been designed for use by wearer's with or without spectacles. If spectacles are worn beneath the visor, in some circumstances impacts may be transmitted through the eye wear enclosed by the visor. For the ultimate in respiratory protection, the side face seals should